sealift
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MAY 1975

Excellence Is Just Routine

"Routine" is not generally considered a strong word. By definition, it refers to actions, events or correspondence that are repetitious or commonplace. And yet some routine correspondence has a great significance. It is the very fact that congratulatory messages crossing my desk are repetitious, and thus routine, that makes them especially important to me. The continuing stream of messages which commend MSC people for outstanding performance offers proof that extraordinary accomplishment is the rule rather than the exception within the Military Sealift Command.

Case in point is a recent letter from the Bureau of Naval Personnel which announced that the Secretary of the Navy has authorized the award of a Meritorious Unit Commendation to the crew of USNS Kane. In a citation signed by Secretary J. William Middendorf II, the Kane crew were lauded for "flawless superb performance, ingenuity (and) unfailing devotion to duty." Those plaudits were earned for deep water submarine cable operations in the eastern Atlantic Ocean between June 18, 1973 and July 31, 1975

Another congratulatory message recently received was from the commanding officer of the Naval Oceanographic Office. It cited the crew of USNS Bowditch for outstanding performance of survey operations in the eastern Atlantic Ocean area. "Your successful efforts," the message noted, "have contributed greatly to support of this country's naval forces."

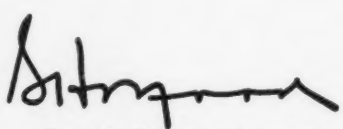
Also routine was a recent message which reported that USNS Norwalk had successfully completed a technical security inspection, and a nuclear technical

proficiency inspection. As this message pointed out, cooperation and teamwork of U.S. marine personnel and MSC crewmen were essential ingredients to success.

Another laudatory message cited Lt. Rodney Cardoza, head of the MSC Unit at Kaohsiung. Through his extraordinary efforts, literally around the clock, USNS Sea Lift was able to leave port 12 hours early. Another MSC ship awaiting a berth was then able to move in. Time saved reduced operational costs and speeded up delivery of needed cargo.

Later this month, messages from the President and maritime leaders will note the annual observance of Maritime Day—a day set aside to honor the accomplishments and skills of all who follow the seafaring trade. While Maritime Day focuses short-term public attention on merchant mariners, the most lasting testimony to the courage, skill and dedication of seafarers and those who support them is to be found in the routine messages which recount their day-to-day successes.

It sometimes seems that there should be a dramatic means of expressing congratulations for superior performance. But, just as good news concerning human endeavors infrequently makes newspaper headlines or TV reports, accounts of dedicated human performance are not often widely disseminated. We expect outstanding performance, and such performance thus becomes "routine." It is, nevertheless, recognized, and appreciated. And routine though they may be, the traditional Navy "Well Done" is both a fitting and deserved accolade—one which MSC mariners continue to earn.



Commander, Military Sealift Command

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COVER: Science-fiction-like domes and dishes of the range tracking ship USNS Arnold and her sister ship USNS Vandenberg attract much attention at Port Canaveral, Fla. See "The Air Force Navy."

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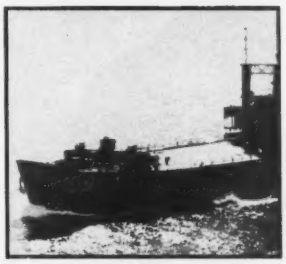
State of the Navy

Chief of Naval Operations Adm. James L. Holloway III reports on Navy status.



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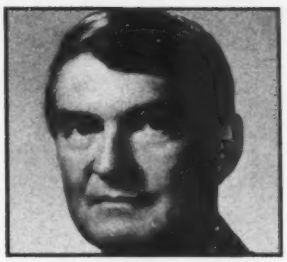
Joining the Fleet

Three more fleet oilers and a stores ship are scheduled to join MSC's growing support fleet.



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A Look at Logistics

Recently retired head of the Industrial College of the Armed Forces examines the viability of U.S. logistical support.

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Chief of Naval Operations Posture Statement:

The State of the Navy

Chief of Naval Operations James L. Holloway III recently reported on the posture of the U.S. Navy to the Senate and House Committees on Armed Services. In a continuing effort to keep **Sealift** readers informed, Admiral Holloway's statement is reprinted here.

In my first report as the Chief of Naval Operations, I believe it is most appropriate to outline the naval philosophy which forms the foundation upon which I approach my responsibilities. Thus in this summary statement, I shall deal with some rather basic questions: What is the Navy's primary mission? Is that mission relevant in today's world? What size should the Navy be? And, finally, can the Navy carry out its mission?

First, we must remind ourselves that the primary mission of the United States Navy is to gain and maintain control of the seas, and to utilize that control in support of national policy. By control of the seas I mean the assurance that we will have continued free use of international waters wherever and whenever required by our essential national interests.

The Navy's mission is conducted within the framework of our overall military strategy, in joint operations with other services and in combined operations with our allies. I do not envision the U.S. Navy fighting an isolated war at sea with the Soviet Navy.

In the foreseeable future, I am convinced there will be no diminution of the national requirements for this Navy mission. Indeed. a number of trends suggest it will increase. The United States is essentially an island nation. Two of our states lie overseas. Much of our foreign trade is intercontinental. The United States is not independent in terms of raw materials. As Secretary of the Navy J. William Middendorf II mentioned, we must import 35 per cent of our current oil consumption. By volume,

"The United States is essentially an island nation. The integrity of our sea lanes is a prerequisite to the conduct of all major overseas operations."

99 per cent of our overseas trade is carried by ship. Economic interdependence is a fact of modern-day life.

Our political and security relationships equally involve us overseas. The United States has defense treaties with 43 other nations, and 41 of these lie overseas. The validity of these arrangements depends absolutely upon our ability to maintain the integrity of our sea lines of communication. In fact, the integrity of our sea lanes is a prerequisite to the conduct of all major overseas operations.

The mechanization and fire power of modern military forces require resupply of ammunition and petroleum products in such quantities that the great bulk of these combat consumables can only be carried by ships.

Control of the seas is also required before the Navy can conduct its other missions, such as tactical air strike and amphibious operations.

Our foreign policy, international trade, and import needs determine our overseas commitments and the pattern of our essential sea lines of communications. Threats to the security of these vital overseas areas and the connecting sea lanes must be considered as threats not only to our allies but, more fundamentally, to our own security.

"The ability of U.S. forces to support our interest around the world, and to maintain our essential commitments, is becoming increasingly difficult."

In peacetime, the function of the Navy is to maintain a credible military presence overseas in those areas of critical importance to us and our allies, both to reassure our friends and to deter potential adversaries.

For years, the presence of our naval forces on station in the Mediterranean, the Western Pacific, and more recently, periodic deployments in the Indian Ocean, have given our national authorities a credible, reliable and very flexible instrument for the support of our foreign policy and provided an underpinning for our diplomatic efforts to maintain peace and stability in areas that matter to us.

We need only to scan the globe to see its surface pocked with trouble spots: Ethiopia, the Middle East, Cyprus, South Vietnam, Cambodia. If we reflect upon this catalog of turbulent areas, we will realize it is no less broad in span than the range of geography that has affected our interests with regularity since World War II.

In addition, since the oil embargo of 1973 our interest in the Indian Ocean has grown considerably. Our presence there is to demonstrate our concern for the security of the vital oil routes from the Persian Gulf, and to reassure our friends in the Middle East of our continuing interest in their security as well.

But the ability of U.S. forces to support our interest around the world, and to maintain our essential commitments, is becoming increasingly difficult.

For today we have a diminishing overseas base struc-

ture, with additional uncertainties for the future:

★ Our relationships with Turkey are under stress.

★ Greece is reviewing the status of her NATO relationships, and bilateral U.S. base arrangements.

★ We are currently renegotiating base rights with both Spain and Portugal, with key bases such as the Azores and Rota at stake.

★ The base structure in Thailand has been substantially reduced in the past several years.

The Navy must not only provide a worldwide peacetime military presence, but must always be prepared to carry out its combat functions across a broad range of potential conflict scenarios. Maintaining this readiness posture is increasingly complicated by the continuing growth of the Soviet Navy—not so much in increased numbers of ships as in the steadily improving quality of their forces which translates into significant advances in overall warfighting capability in its broadest strategic sense.

It is against this backdrop of undiminished commitments, a troubled world, and growing Soviet maritime capabilities, that we assess the adequacy of our own naval resources. Clearly, the challenge is formidable. This year we have 502 ships. In fiscal year 1976, the Navy will have 490 ships, the lowest total in the active fleet since 1939.

Certainly our newer ships are more powerful and capable than those they replace. But the tasks are greater and geography has not changed. The Navy must still cover the same broad ocean areas. And this means we must be concerned with numbers as well as with capabilities.

We need ships in a proper balance among types; that is, carriers, surface combatants, submarines, amphibious and support ships. And within a constrained budget, we need a careful balance between expensive, high performance ships and the less expensive ones we can produce and deploy in greater numbers.

It is these two kinds of balance that go into the careful development of our shipbuilding programs. These programs will enable the Navy to achieve a modernized fleet rebuilt to a size appropriate for the future.

What should the size of the Navy be? First, it should include a priority national program, an adequate strategic fleet ballistic missile submarine force. Second, it should be large enough to maintain in peacetime, effective naval forces in the Eastern Atlantic, the Mediterranean, and the Western Pacific, including periodic presence in the Indian Ocean.

By effective naval forces I mean deployed fleets offensively powerful enough to prevail over potential hostile forces routinely deployed to the area, defensively strong enough to absorb a first blow and survive a surprise attack to retire for reinforcement and redeployment, and logistically equipped to operate in their area of responsibility in spite of the loss of forward bases through either political or military action.

The Navy must be large enough to reinforce those forward deployed forces in time of crises and alert, and to have enough ships of the right kinds to carry out—in conjunction with the other services—the tasks demanded by national security.

All this requires about 600 capable ships. To attain a fleet of this size, our shipbuilding programs must average at least 30 ships per year. Inflation has severely constrained our fiscal year 1976 program to a level of 23 ships. I am encouraged that the fiscal year 1977 program of 30 ships will start us along the path toward a properly sized Navy.

But ships and aircraft alone can not do to the job. We can never realize the full potential of these modern weapons systems without capable people to maintain and operate them to the limits of their design capability.

We must establish in the Navy a competent corps of career professionals. We must recruit high quality young

"We must concentrate on getting the most we can out of what we have... I am emphasizing fleet readiness as our highest priority concern."

men and women, and reenlist a high enough percentage of the best.

To do this in the all volunteer atmosphere is demanding. We cannot compete in the civilian manpower market on an equal basis. Service people are not simply civilians in uniform. They must go where they are ordered in spite of separation, inconvenience or discomfort. And they must carry out their military orders even though it may mean at the risk of their lives.

This takes a special kind of person and we must provide an ample compensation which will show him his dedication is appreciated. In short, we must strive to make a service career as attractive as we can within the unavoidable limitations imposed by military life.

I am a realist. In spite of expanding commitments, diminishing force levels, increasing Soviet capabilities and the challenge of the all volunteer force, we must face today and the immediate future with what we have in hand. We can not wait for more ships and more people. We must concentrate on getting the most we can out of what we have in order to provide for the highest possible level of capability today.

To this end, I am emphasizing fleet readliness as our highest priority concern. We must always keep before us the fundamental fact that the U.S. Navy exists solely for the purpose of maintaining a fleet ready to carry out its missions in support of our national interests. The effectiveness of all we do must be measured against this criterion. I am focusing on this as we implement our "Total Force Policy."

Consistent with our philosophy of realizing maximum capabilities from available assets, we are taking steps to increase the readiness of our Naval Reserve forces; to relate them more directly to our inventory of ships, aircraft, and support equipment, and to integrate them fully into our strategic planning.

These steps are intended to make the reserves full partners in the Navy's total force; to give them roles which are militarily meaningful in all cases, and to assure a real contribution of each reservist to our wartime and contingency capabilities.

I have been most encouraged this past year as we have seen previously authorized programs come to fruition. The initial fleet introduction of the highly capable F-14 Phoenix system was signalled with the deployment of two F-14 squadrons in the Pacific Fleet.

"By a small margin in significant scenarios the U.S. Navy could successfully carry out its mission against the Soviet threat, but not without suffering painful losses."

Fleet introduction of the advanced anti-submarine warfare carrier aircraft, the S-3A, was commenced. The first patrol hydrofoil missile ship, Pegasus, and the first of the 688-class of nuclear-powered attack submarines, Los Angeles, were both launched in 1974. We have placed in commission USS California and USS South Carolina, representing a new class of nuclear powered guided missile frigates.

With a calendar year 1974 marking the Navy's second full year in the new all volunteer force environment, I am cautiously optimistic. In the aggregate, our statistics are encouraging. We met over 98 per cent of our recruiting goal. Our career petty officers reenlisted at a rate of 82 per cent. And our first term eligibles reenlisted at a rate of almost 40 per cent, a 400 per cent improvement since 1970. Although much more needs to be done to stabilize our personnel forces and balance our skill requirements, I am proud of our accomplishments because this has been an all Navy effort.

As I mentioned previously, it is readiness to accomplish our missions, both now and in the future, that is my single most important concern. This leads to my final question: Can the Navy carry out its missions and task in support of our national strategy today?

My answer to that question is a qualified yes.

Qualified, because there is an infinite number of circumstances in which a U.S.-Soviet conflict could be cast. But I consider that today, by a small margin in signifi-

cant scenarios—particularly those involving vital U.S. national interests—the U.S. Navy could successfully carry out its mission against the Soviet threat, but not without suffering painful losses.

A second qualifier must refer to this particular moment in time. Today we have the forces which provide the capability for marginal success. But further erosion of our force levels, or even maintenance of the status quo in the face of the continued growth of Soviet maritime capability, could reverse the balance of success which currently resides in our favor. Under these projections the United States would no longer be able to prevail at sea in the defense of our most vital national interests.

The Navy budget is keyed to the qualifications I have given in answering that important question. The programs and activities supported by this budget are constrained yet forward-looking. They reflect the basic needs to meet our readiness requirements as well as the revalidation of essential prior year programs. I believe the budget is responsive, both to Congressional concerns, and to Navy mission requirements. It represents a finely balanced, closely integrated array of programs and objectives which are based on military judgment and have been given the closest scrutiny.

In conclusion, the Navy, after undergoing calculated and necessary reductions in force levels, and the transition to an all volunteer force, is in a period of consolidation as it takes the first steps in execution of its Congressionally endorsed plan to rebuild a modernized, increased force level.

Today, we can accomplish our mission. We are facing our current responsibilities squarely and with confidence. Nevertheless, if current adverse trends were to continue, Soviet maritime power could gain a clear military advantage.

Thus, the full support of the Congress for the Navy budget—now and in the critical years just ahead—is absolutely necessary if we are to maintain the same degree of confidence in the future. In short, and in a very literal sense, the proposed Navy programs represent a reaffirmation of U.S. determination to remain a maritime power whose ability to use the seas for its essential national purposes can be successfully challenged by no one.

⚓

There's been some changes made

By Howard L. Rosenberg

Undergoing a continuing metamorphosis, the changing face of Military Sealift Command is reflected by its people. Within the next few months, new people will join command worldwide units and there will be farewells to those who will leave lasting impressions.

Three of MSC's four area commands will have new leaders and the command organizational charts will change as some people retire and others move to new jobs within the organization.

At MSC headquarters in Washington, D.C. the guiding force behind MSC's fleet support program, Capt. Henry E. Phelps, will retire in June. Replacing him will be Capt. Richard J. Dietz. He has been operations scheduling officer for the Atlantic Fleet.

Capt. William W. Wilson, now on the staff of the Naval Electronic Systems Command, will report aboard in June to relieve Capt. George L. Hart as head of MSC's cargo-passenger division. Captain Hart will move up to direct MSC operations replacing Capt. Henry J. Lyon who is scheduled for reassignment as commanding officer of the MSC office in Hampton Roads, Va.

Headquarters' tanker division has also had several changes. Former head of the division Capt. Walter J. Kennedy has relieved Capt. Harold MacMillan, who retired last June, as head of the administration and manpower division. Don Dahl now heads the tanker division and Cmdr. Walter H. Carpenter fills the deputy position. Lt. Peter Van Dusen recently joined the tanker division as a scheduling officer after a tour of duty aboard the fleet oiler USS Ashtabula.

Rear Adm. Frank B. Guest, Jr. is now the commander of Military Sealift Command, Atlantic. An active duty reservist, Admiral Guest has had numerous assignments including service aboard the attack transports USS Neville and Calvert, as commanding officer of the destroyers USS Bronson and Hunt and on the staffs of Naval Recruiting Command and Naval Training Command. Most recently he commanded the Naval Surface Reserve at Fort Omaha, Neb.

Chief of staff at MSC, Atlantic, Capt. Robert D. Sante, will retire in June and Capt. Herman E. Fritzke, current commander of MSC, Eastern Atlantic and Mediterranean, will relieve him.

Capt. Joseph M. Culbert, assistant chief of staff for operations and plans at that area command, will take over the helm there. Cmdr. T. G. Kiefaber, now attending the Naval War College in Newport, R.I., will assume his duties.

The commander of MSC, Far East—Capt. Darrel D. Ruebsamen—also will retire in June. Capt. Gerald W. Dyer, a former submariner now serving as the chief of the organizational policy branch of the Joint Chiefs of Staff, will relieve him.

Lt. Cmdr. John P. Ackert, former director of the ships operations division at MSC, Far East, was succeeded in March by Cmdr. Dixie L. Dunham.

Cmdr. Joshua J. Nelson will replace Cmdr. Charles M. Roland as commanding officer of MSC, Gulf. Commander Roland will command the MSC office at Port Canaveral, Fla. Commander Nelson came from the MSC office in the Canal Zone where he was relieved by Cmdr. Michael H. McDonald, former head of MSC headquarters' special project division. Commander McDonald was relieved by Cmdr. Charles N. Diesel who joined the command after a tour of duty with the Naval Weapons Engineering Support Activity at the Washington Navy Yard.

Cmdr. Wallace J. Schwartz, commanding officer of the MSC office in London, will move to Hampton Roads, Va. to serve as chief of staff there.

Capt. Oral J. Bilderback will relieve Capt. Harry S. Hart as the commanding officer of the MSC office in Honolulu. Captain Hart will move up to chief of staff at MSC, Pacific in Oakland, Calif. to relieve Capt. Elwin C. Maupin who is retiring in June.

In Alaska, Lt. (j.g.) Kathleen A. Connor has relieved Lt. Richard A. Moore as executive officer of MSC office, Anchorage. ⚓

The "Air Force Navy"

By Capt. Joe Culp
Jim Connor
Maj. Donnelly Johnson

The harbor at Port Canaveral, Fla. sometimes presents a scene unlike that of any other harbor in the world with the dockside environment dominated by a maze of shining white parabolic dishes and domes.

These ride atop two ships of what is sometimes called the "Air Force Navy." The vessels are actually converted C-4 cargo vessels modified to cruise the world's oceans in search of the electronic voices of airborne rocket boosters and their payloads. Both government owned and operated by Military Sealift Command, they are the USNS General Hoyt S. Vandenberg and USNS General H. H. Arnold.

The two ships are operated for the Air Force Eastern Test Range (AFETR), a 10,000-mile long laboratory down which such agencies as NASA, the Army and Navy and other Air Force units launch their missiles and space boosters.

The launch end of the range is the world-renowned Cape Canaveral Air Force Station. It extends southeast past the islands of the Bahamas and the eastern tip of Brazil, over the South Atlantic's Ascension Island, across South Africa, and finally terminates in the Indian Ocean.

It is because of the vast distances between land masses that the instrumented ships are needed. Massive and complex tracking and data gathering instruments must be located at specific points along the path of the rocket's flight to record critical events that occur.

Called "ARIS" for Advanced Range Instrumentation Ships, the two vessels are seagoing tracking and data gathering sites. The strange geometry above their decks, the dishes and domes, are radar and telemetry antennas and optical devices.

The ARIS were specifically designed to gather radar signature and metric, telemetry and optical data on ballistic missile reentry vehicles and penetration aids. Each ship carries multiple, high-performance radars, telemetry and optical instrumentation. Aside from their radar, telemetry and optics, they have stabilization, meteorology, data handling, timing, mission control, communications, and marine support equipment which allows them to operate independently in any ocean area.

In addition to the primary purpose of the ARIS as tools for gathering reentry data, the ships constitute a flexible expansion of the missile test ranges beyond the coverage capabilities of land-based instrumentation. They support both missile flight tests and space vehicle operations.

Before their conversion, both ships were troop ships. The conversion program took more than two years. Arnold became operational in 1963, Vandenberg in 1964.

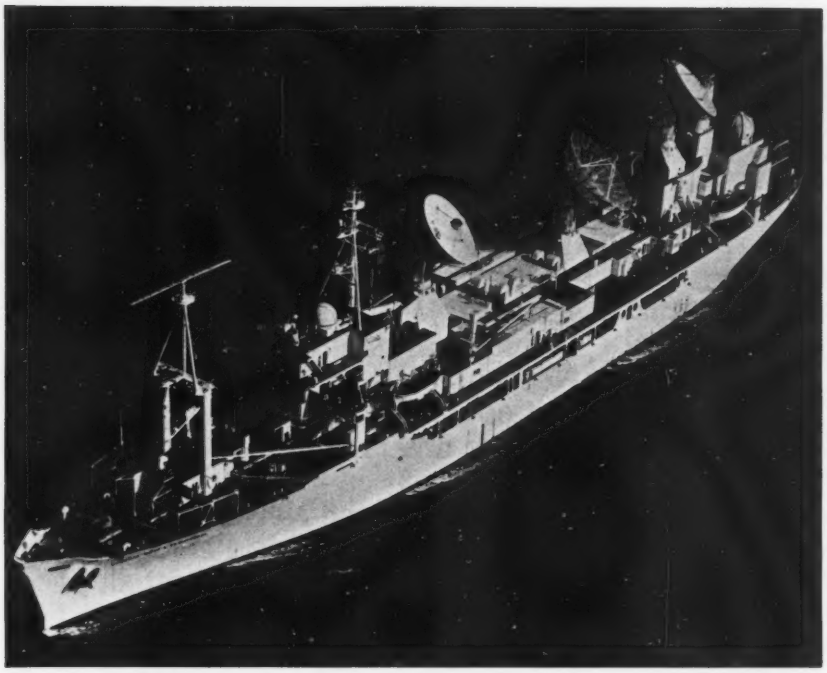
While the ships are crewed by MSC, the ARIS instrumentation is operated by a highly skilled technical team. Team members are employees of the RCA International Service Corp. missile test project located at Patrick Air Force Base, Fla. Engineering talent is focused on operational problems to ensure that the sensor complex will consistently yield the highest quality data with mobile platforms.

The overall ARIS program is managed by the ships management branch at AFETR headquarters. Branch chief is Lt. Col. Jim Tefft and working for him are four Air Force officers who serve as operations managers aboard the ships. These officers—Maj. Don Johnson, Captains Hal Kemp, Joe Culp and Jim Gnuse—have one of the more unusual jobs in the Air Force, requiring them to spend long periods at sea as managers of technical operations on the ships.

Life aboard the ships is not like the structured, businesslike atmosphere of a warship. It is more akin to that of a passenger vessel peopled by working scientists and technicians. Often as not, conversations over coffee revolve around missiles, radar tracking, telemetry data or communications. Life with the AFETR Navy is not easy at times, but it is always interesting, combining the urgency and romance of a seafarer's life with that of the precise scientist-technician.

Sometimes extreme measures are necessary to meet unusual mission requirements. Recently, while USNS Arnold was operating in the Central Pacific near Kwajalein, Marshall Islands, a new, high priority mission assignment was received.

With a notice of only a few hours, the ship was sailed at top speed to Midway Island where more than 50 people and 60 tons of equipment and cargo were loaded overnight. The ship sailed from Midway fully prepared for the new mission after a

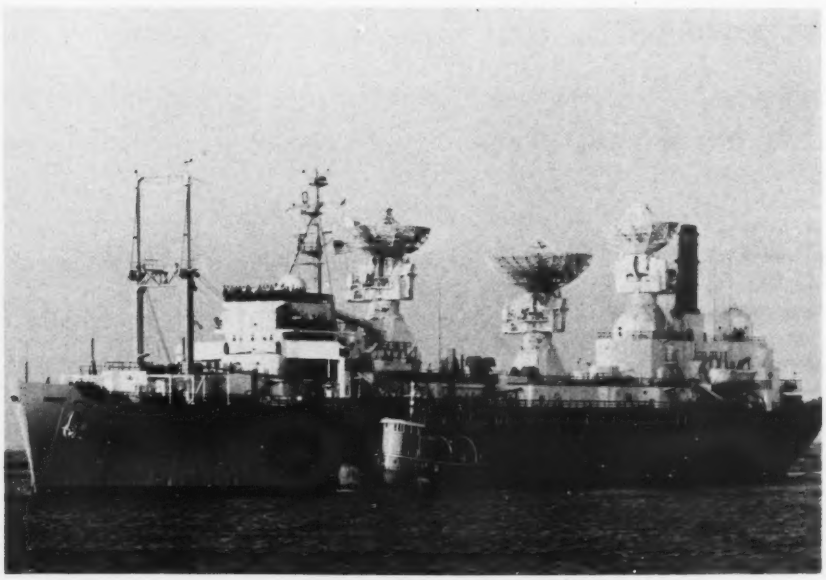


USNS Vandenberg

stay in port of only 20 hours. This outstanding mission support was possible only through a 24-hour-a-day, 7-day-a-week effort by U.S. Navy, U.S. Air Force and range contractor personnel located in offices from the East Coast of the United States to Midway Island.

There are quiet moments as well. Once all systems are checked there usually is time to relax and reflect. And there is opportunity for the men to enjoy the bright lights of the city when they return to port after a long voyage. Like seafaring men throughout the ages they work hard and play hard.

But the ARIS men know, when they return to sea aboard their science-fiction-like vessels, that they are manning a vital link in the U.S. space and missile tracking chain. ⚓



USNS Arnold

FLEET SUPPORT: Getting bigg

By Howard L. Rosenberg

In his posture statement before House and Senate Committees on Armed Forces, Chief of Naval Operations Adm. James L. Holloway III said he was "emphasizing fleet readiness as our highest priority concern."

To release highly trained military men for service on combatant vessels, Navy is expanding MSC's fleet support role by transferring three more oilers and a refrigerated stores ship to the command for Civil Service manning.

Currently MSC has five civilian-manned fleet oilers, four fleet tugs and two cable-layers. Oilers USNS Taluga, Mispillion and Passumpsic operate with the Seventh Fleet in the Pacific. USNS Waccamaw, transferred to MSC February 24, will join the Navy's Atlantic Fleet after she has been overhauled and modified for civilian operation. USNS Marias, another oiler, recently joined the Sixth Fleet in the Mediterranean after serving with the Middle East Force in the Indian Ocean for nearly nine months.

Marias was under way more than 80 per cent of the time supporting U.S. Middle East forces, NATO ships and African navies.

The three fleet oilers to be transferred to MSC are the Pawcatuck, in July; Navasota, in September; and Neosho, in December. Navasota will operate with the Pacific Fleet and the others with the Atlantic Fleet.

Pawcatuck and Navasota were both commissioned in 1946 and are the same type replenishment ships as Passumpsic, Mispillion and Waccamaw. The 25,537-deadweight-ton ships have a length of 646 feet, a width of 75 feet and a draft of

Before her transfer to MSC, USS Waccamaw refuels the USS John F. Kennedy.

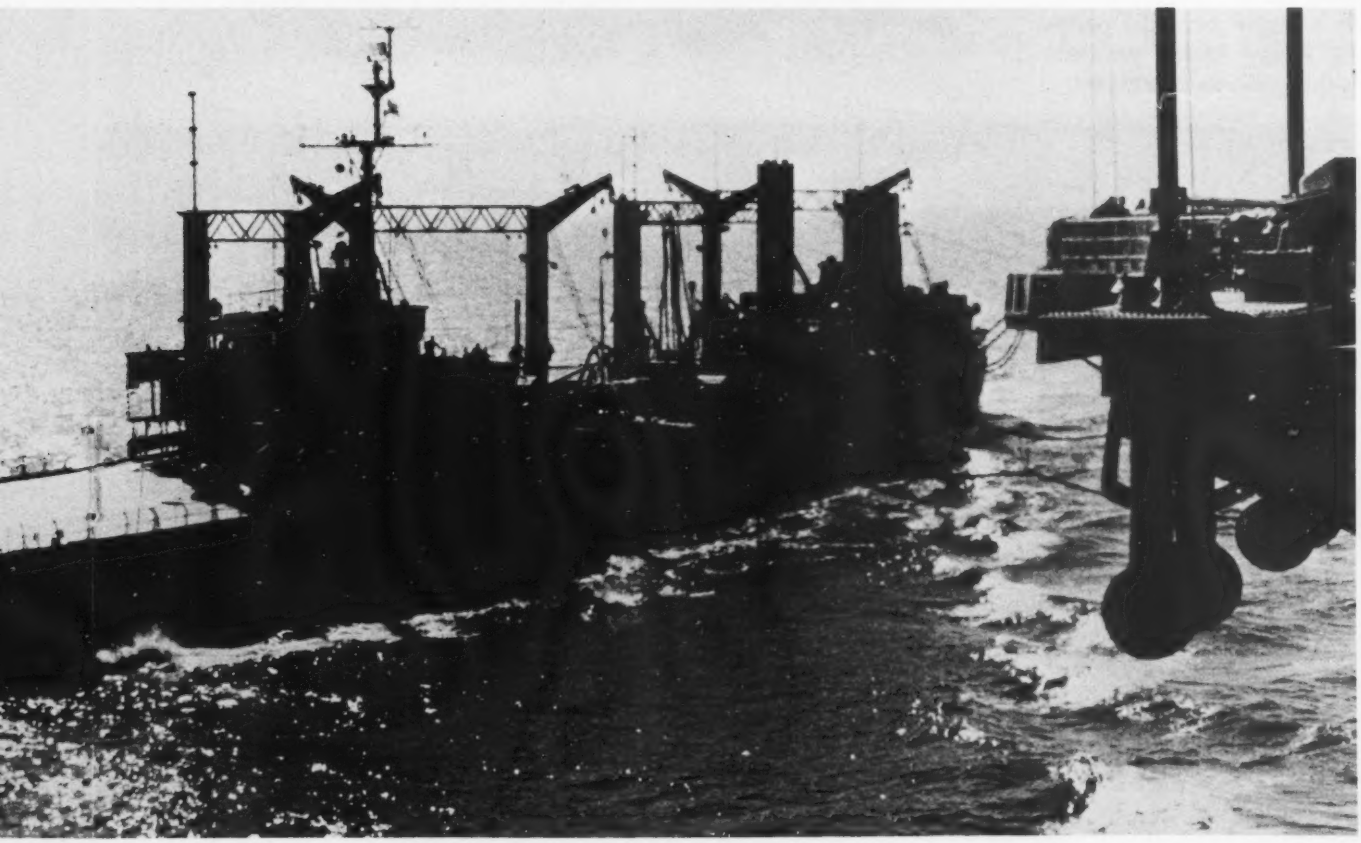
ger and better

35½ feet. In 1963, cargo capacity of Navasota and Waccamaw was increased to approximately 150,000 barrels.

Neosho will be the newest of MSC's fleet support ships. She was commissioned in 1954 as the first of her class. The 26,244-deadweight-ton vessel and others of her class are the largest Navy oilers ever built. She was constructed at Bethlehem Steel Shipyards in Quincy, Mass. and measures 655 feet in length and 86 feet in width. She has a draft of 35 feet. Neosho can carry approximately 180,000 barrels in 24 separate tanks.

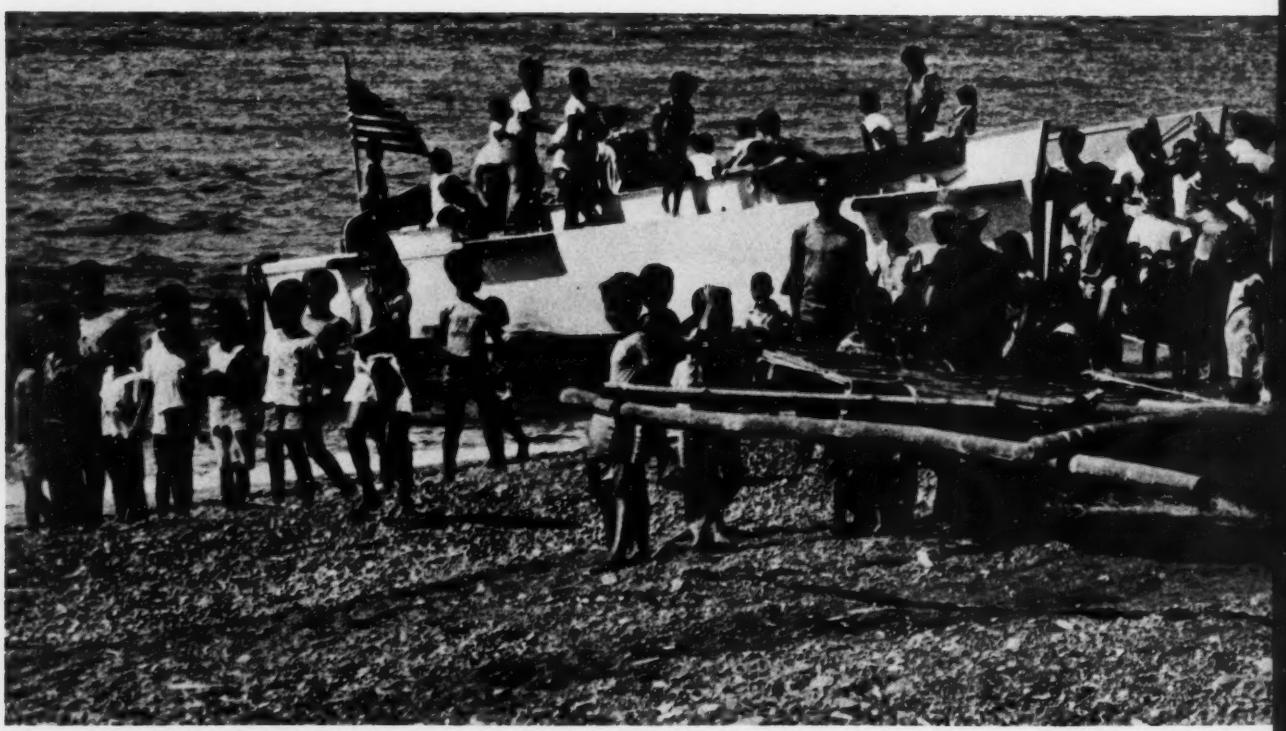
Navy recently announced plans to transfer a fleet stores ship (AF) to MSC. The command will take over USS Rigel at Norfolk, Va. on June 23.

Other fleet support ships operated by the Navy's sealift command include two cable-layers, USNS Aeolus and Neptune, and four fleet tugs, USNS Atakapa, Mosopelea, Lipan and Ute. ⚓



Electronics Technician Third Class Steven W. Goodwin (left) and Engineman Third Class Robert C. DeWolf unload Project Handclasp supplies from a landing craft on Maracanao.

A Chauvenet landing craft pulls up on the beach next to a native outrigger canoe as Panay Island residents watch delivery operations.



Project Handclasp

Text by Navy Journalist Gary L. Martin
Photos by Navy Photographer J. F. Greer

U.S. Navy men with Oceanographic Unit Four aboard MSC's USNS Chauvenet recently took time out from a busy schedule of hydrographic survey work to deliver more than 7,000 pounds of Project Handclasp material to needy Filipinos on several islands in the central Philippines.

Project Handclasp is an international goodwill operation which has been carried out by the U.S. Navy for the past eight years. Materials and foodstuffs are donated by concerned Americans and collected at the project's headquarters in San Diego, Calif. From there, materials are delivered to different bases throughout the world for further distribution to needy persons and organizations.

Delivery of the supplies was coordinated by the Project Handclasp representative at the U.S. Naval Base in

Boatswain's Mate Second Class Ralph Amato (left) and Constructionman Apprentice Ronald Smith pause while loading Project Handclasp material aboard a helicopter.

Subic Bay, P.I. and Lt. Cmdr. Charles K. Roberts, commanding officer of Oceanographic Unit Four, aboard Chauvenet.

The operation enabled the project to help villagers who had not heard of Project Handclasp. The material, consisting of food and medical supplies, was delivered to the villagers on the islands of Caluya, Maracanao, Batbatan and Culasi, on the island of Panay. Navigational aids personnel and local officials on the islands helped with the distribution.

Sailors from the unit used landing craft and helicopters to ferry the supplies from the ship to the islands. Ens. Cipriano Tero, from the Bureau of Coastal Geodetic Survey office in Manila, acted as liaison officer for the project.

Military Sealift Command Civil Service crewmen aboard Chauvenet assisted the Navy men during helicopter loading and unloading, launching and recovery of the landing craft.

Chauvenet is currently operating in Philippine waters. Scientists from the Naval Oceanographic Office are updating coastal charts of the area. ⚓

A Logistics Perspective

By Lt. Gen. Walter J. Woolwine

Photos courtesy of Army Logistician Magazine

Logisticians are supposed to be gloomy fellows who tell commanders they will court disaster if they fight, because there aren't enough supplies.

We have serious logistics problems today, but I assure you we do have the supplies and we can fight, if we have to. In fact, by any yardstick you care to use, we are in better shape logistically today than at any time in our peacetime history. The capability of our forward deployed Army for sustained combat, supported by prepositioned reserve supplies, has never been higher. The ability of the Navy to operate for extended periods in the oceans of the world, supported by its versatile and new multiple-commodity ships, is magnificent. The ability of the Air Force to deploy its squadrons with their support kits to a bare base overseas and become operational practically overnight is an extraordinary new capability. And to these we can add the substantial movement capacity of the Military Airlift Command.

Twice in the last few years or so you have seen this logistics readiness tested. First, in the waning days of the Vietnam War, we assembled and lifted, by air and by sea, squadrons of planes, hundreds of tracked vehicles, thousands of vehicles, and tens of thousands of small arms to South Vietnam. Again in the last quarter of 1973, we supplied the Israeli forces with over a billion dollars' worth of material so as to restore their striking power. I believe it significant in both of these cases that our national strategic objectives were achieved by the operation and effectiveness of our military support establishment, and in neither case were our own fighting men required.

These incidents remind us once again that we are always faced with the three fundamental and interacting elements—strategy, tactics, and logistics. These are so interwoven as to be inseparable in any form or level of intensity of war. This is a truism. Another is that the commander must have the authority to use his resources as he sees fit in order to achieve the objectives assigned him.

We Americans have always tended to think of logistics as one of the principal sources of our military strength. Certainly we have always shown a special flair for accomplishing logistics miracles. On the other hand, we have certain unique penchants or hang-ups, growing out

Post exchange in DaNang at height of war. "One of our hang-ups is the idea that the American fighting man must be provided with material comforts and services commensurate with the American middle class standard-of-living."

of our traditions and culture, which inflate and complicate our logistics requirements.

One of our hang-ups is the idea that the American fighting man must be provided with material comforts and services commensurate with the American middle class standard-of-living.

Another is, expend material to save lives. From this one comes the heavy emphasis that our military doctrine places on firepower. We saturate the enemy with fire in order to reduce our own losses.

Still another is our technicism. We love gadgets and technical complexity. We are confident in the superiority of American technology. We are prone to assume that the most advanced, often the most complex, equipment is ipso facto the best. This is one reason for famous proclivity to "gold plate," which many critics believe not merely inflates unnecessarily the cost of equipment but even degrades its performance.

Add to these a military doctrine that almost amounts to a tradition: logisticians never question the validity of stated requirements. This is part of the "can-do" ethic of the American military. Its advantages are obvious, but it also eliminates a potentially useful curb on the normal tendency of commanders to build multiple and expensive safety margins into their plans.

So much for our rational hang-ups—but I'll come back to them later.

Now, consider this rather disturbing fact. Since World War II no nation's sea and air supply lines to oversea theaters have been attacked or threatened. Oversea forces have been supplied with as much material as the ships and planes and ports could handle. For example, in 1962 the USSR built up a military base in Cuba without American interference. Eventually, when we saw that offensive weapons were involved, we imposed a blockade, which effectively stopped the build-up. The Chinese, North Koreans, and North Vietnamese have developed effective long-range overland logistics support systems capable of functioning under enemy air interdiction, but they are probably inadequate to support large-scale sustained operations by mechanized forces wielding massive firepower.

I question whether we could have built an enormous base system in South Vietnam and Thailand, and sustained the scale of the military operations of 1965-72, if there had been even limited interdiction of our oversea sea and air communications. All our systems, doctrine, and technology have developed under conditions of logistics plenty. Every ton shipped is delivered. That's a luxury we didn't enjoy in World War II. Think about it.

By identifying some of current problems, I can also suggest changes I think might be useful.

We have two chains of command today. The first is the operational chain which now runs from the President through the Secretary of Defense. From there the chain will run to the Chairman of the Joint Chiefs of Staff, and on to the operational joint commander. This is the chain which is involved in the day-by-day management of crises and the conduct of active operations. My experience on the joint staff indicates that the service chiefs are not really involved in the daily operations of a war. They do play an essential role in the provision and support of the forces involved in such operations.

On the other side there is the logistics chain of command from the Secretary of Defense, and particularly from his assistant secretary for installations and logistics, to the services, and then to the components in the area commands. The joint commander in carrying out his responsibilities for support does as much as the services will permit and, without outside pressure, no more. It is this interface between operations and logistics at the joint commander level that I wish to comment upon.

The joint commander develops his operational concept and sends it to the component commanders, who then provide him with their analysis of force and logistics requirements. These requirements are transmitted to the services who review them and tell the joint commander what they have programmed and what they can support.

U.S. sealift to South Vietnam,
to the nearest thousand measurement ton.

	Ammunition (000)	General (000)	AAFES (000)	Other (000)	Total (000)
1968	1,743	5,153	963	2,192	10,051
1969	1,419	3,287	1,019	2,080	7,805
1970	1,150	2,181	861	843	5,035
1971	739	1,197	587	415	2,938
1972	893	787	43	204	1,927

The Commander-in-Chief (CINC) then either revises his plan accordingly or takes the matter back through joint channels to the Joint Chiefs of Staff for resolution. This give-and-take is the basis of much of our planning cycle.

The essence of this effort is to relate what the man in the field needs to do his job to what the folks back home say they can provide him. Suppose the CINC says he wants to fly 12,000 tactical air sorties and 1,000 B-52 sorties in a given time period in order to meet his operational needs as he sees them. The Air Force replies that it has only funded the ammunition for 10,000 Tactical Air Command sorties and 900 B-52 sorties. So the CINC takes the ammunition, say, from the Navy, based upon his responsibility to set priorities and make allocations. The Navy could well say that it has no responsibility for Air Force support. This is a typical conflict between the services and the CINC. The obvious question is whether there should not be a greater role for the CINCs to play in the programming and budgeting cycle.

At the same time that the CINC is attempting to relate his logistics support to his operational requirements, he is more and more being tasked to eliminate duplication and promote efficiency and economy in the use of resources within his assigned area. Generally, changes he would make involve consolidations of functions and facilities or tasking one service to perform support for another service. This of course brings him into conflict with the military services who fund and staff their field units to support their own operations, not the operations of their fellow services.

Changes in support responsibilities in any particular area have a bow-wave effect with repercussions in other parts of the world as well as on the home front. Regardless, the joint commander will by necessity have to involve himself more and more in logistics support systems. As he does this, I think you will find him trying to simplify the organization given him to carry out this support.

For example, the Military Assistance Command, Vietnam (MACV) found itself involved in the operation of an air-transport system, ship scheduling, construction and its funding, post exchanges (PX) and PX supplies, movement of construction material within the Delta, coastal shipping, and allied support, among many other things. For most of these items, MACV found itself dealing with the service headquarters or component commanders outside its normal operational channel—the Commander-in-Chief, Pacific. Where these intermediate headquarters controlled assets, these separate channels could be justified. On the other hand, where such intermediate headquarters acted as channels for only forwarding requests, the duplication was not justified and should have been eliminated or consolidated.

In 1971, a group of experts serving on the Fitzhugh Blue Ribbon Panel proposed a unified logistics command. This was not an unexpected recommendation. The consistent theme sounded by all the boards and commissions that have looked at us since World War II is that more unification in support of logistics operations will improve efficiency. In 1955, for example, the second Hoover Commission proposed a single Defense supply and services agency. The Rockefeller Panel in 1958 recommended that the Secretary of Defense be given responsibility for support, and this was put into effect by the Defense Reorganization Act of 1958. The Fitzhugh report has continued the same theme.

Frankly, when I was in Vietnam, I saw no difference between Defense Supply Agency (DSA), or Government Services Administration (GSA), or Air Force or Navy support to my Army units. On the other hand, I found supporting others a real headache. I was always concerned, on the one hand, that they got their fair share, and on the other, that they did not preempt the supply of scarce items.

We had procedural problems, of course. All of them were worked out, but I believe all of us would have preferred at the local level to handle our own support. In this regard, I am pleased to see that the Commander in

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Chief, Pacific (CINCPAC) has determined that no improvements in economy and efficiency at the local level have resulted from the Guam experiment which made the Navy responsible for supplying the Air Force with a number of common housekeeping items. Notwithstanding this conclusion at the retail level, I think the converse is true at the wholesale level. I personally feel there is no question but that we will see more single-manager DSA responsibility in the continental United States.

Support agencies can not support contingency plans with military forces in the early stages of operations. Accordingly, the services must plan to provide such initial support. Given the lack of clear-cut indications of economy or improvement in efficiency, the joint commanders should continue to task components for support according to service responsibilities. The abuses of layering of intermediate headquarters will not be corrected by the creation of additional commands.

Next, let me turn to oversea bases, our forward deployment. As I look at our contingency plans, it is apparent that we have not fully developed the implementation of those plans in the various systems ranging from precautionary evacuation of U.S. citizens to full-scale war.

For example, last spring, Lebanon was threatened with hostilities between the government forces and the Palestinian guerrillas scattered in camps throughout the country. In addition, some Palestinian troops crossed the border from Syria to attack Lebanese forces.

As we gathered in the National Command Authority room in the Pentagon to discuss the situation, the first order of business was to plan for the evacuation of American civilians. The Beirut airport was under fire, and there was a large guerrilla camp between it and the city. The contingency plan called for support from European Command. But it developed that we could not get overflight clearances to fly direct from Germany. The roundabout route, westward over the Netherlands and down around the Gibraltar Cape into the Mediterranean was not much shorter than the route from the United States across the Atlantic.

You will recognize here, in essence, the problem of resupply to Israel during the October war. We had recognized the problem several years ago and requested that overflight rights be negotiated in support of particular plans. We believed that, regardless of the outcome, it was better to know ahead of time so that necessary plans and bases could be prepared.

This plan of action was not approved, since higher authority decided that the countries involved were unlikely to commit themselves in advance to policies and positions on unspecified emergencies. This is essentially the position France takes with respect to many NATO activities, namely, that it reserves its position until the actual event transpires. In the case of the resupply of Israel, it appeared that a number of countries, fearing Arab retaliation, did not wish their territory used by U.S. airlift in our efforts to move equipment and supplies to Israel.

The problem is not peculiar to Europe and the Middle East resupply, we have had it in the Pacific, too. At the time of the imminent agreement between the United States and North and South Vietnam a year ago, we were faced with the necessity of moving large quantities of equipment to South Vietnam. We wanted to bring some tanks out of the depot at Sagami, Japan, and ship them by sea to South Vietnam to avoid the cost of flying from the United States. In this case demonstrators outside the depot gate closed the road to the port. Ultimately, the matter was resolved and the tanks were satisfactorily shipped, but not before it became quite clear that our future freedom of action would be restricted.

While forward bases are a great asset and permit us to react quickly to certain contingencies, no base can be counted on to be available in any contingency, unless it is on territory under our control. We must recognize that it is normal for our allies attitude to change in the course of time, and we should expect this to happen. Our contingency planning must have a variety of assumptions, and the support backup should be analyzed on the basis of each such assumption.

I spoke earlier about the high standard of living and material comfort that we provide for our troops overseas. Let me put that in the context of the Vietnam War, particularly with respect to the supply tonnages it involved. The movement of ammunition from 1969 to 1971 averaged about a million tons a year not including petroleum from Singapore or cargo originating in Japan or Okinawa. PX tonnages—cokes, beer, and such—averaged almost as much, about 800,000 tons.

Compared to the average of 65,000 tons a year North Vietnamese were shipping to their people in the south, and, more important, with the tonnages that actually were getting through, an average of 14,000 tons per year, the gap between input and throughput certainly testifies to the effectiveness of our interdiction effort against supply movement over the Ho Chi Minh trail. But what strikes me as even more important is that, with those tiny supply tonnages coming down from the north, supplemented by what they could scrounge from the countryside, and until 1970, by the substantial additional intake through the Cambodian port of Sihanoukville, the Viet Cong and North Vietnamese fought very effectively in South Vietnam.

Make whatever allowances you want for the differences between the troop populations supported on each side, between the requirements for supplying air power on our side and none on theirs. All this is precisely the point. There was a night-and-day difference between the kind of war we were fighting and the kind of war they were fighting. The difference was very largely a question of logistics. On one side, high technology and supply on a luxurious scale; on the other, the bare necessities of fighting, moving, and living.

They paid a heavy cost, as we know. Well over half of those meager supply tonnages went for food, only about a fifth for ammunition and weapons. That meant

limited firepower and high casualty rates, hoarding of ammunition and manpower for the big offensives, like Tet, and hit-and-run tactics at other times. In military terms, our system was stronger—as long as we were willing to feed it on the scale to which it was accustomed. But it's an expensive system.

Consider the question of mobility. At the battalion level certainly our troops were perhaps more mobile than ever before. Companies moved swiftly by helicopter into areas almost inaccessible otherwise. But the brigade bases, to say the least, were semi-fixed, and the divisions, with the exception of the 1st Cavalry, stayed in essentially the same areas throughout the war.

The statistics of our support infrastructure in Vietnam almost overwhelm you. Seven deepwater ports with 27 berths. Twelve runways at eight major bases with 200 small airfields and the same number of heliports. Eleven million square feet of covered storage. About two million square feet of refrigerated storage. Ice cream delivered by air. A dry-ice plant to keep the ice cream refrigerated.

Meanwhile we were building at Tan Son Nuht and Long Binh major headquarters establishments, air conditioned with furnishings equal to what we have here. Our division headquarters and the base area support facilities tended to be equally plush. We could not have moved even if we had wanted to. What was bad about all this was not merely our lack of mobility, but the number of troops that were tied down in static situations. Consider the hostility that develops between the infantry rifleman up front and all the people in rear areas when such wide variations in living standards exist.

The final point to be made is the cost. In making these remarks I am not pointing the finger at anyone. We all shared in the decision, as a nation. And certainly this war was unique.

If the cost had been lower, the problems of drugs, dissidence, and fragging might have been worse. The standard of medical support has never been higher; and the statistics indicate that life expectancy for the man in combat was greater than any other war. On the other hand, the elaborate facilities were not available in the beginning when the fighting was at its fiercest. Whatever the justification for the expenditures in this particular conflict, I think we can agree that the standard-of-living question deserves study now. We must limit our support to the capability of the system to handle material efficiently until it is consumed. I suggest this is more easily done now, when we are not under the gun, than in the "can-do" environment of actual operations.

What about our ability to support contingency plans involving a full-scale war, for example, in the European Theater? This particular scenario is one of the most taxing of any for which we plan.

First, let's look at consumables, particularly ammunition. The North Atlantic Treaty Organization (NATO) policy on consumables is that each country will have sufficient reserves to provide support until resupply can be effected. Our own forces in the European Theater have somewhat more than this minimum, and reports indicate that although there are some minor storage limitations, adequate stocks are available. Our allies on the other hand have not been willing to invest their defense funds in reserves to the same extent.

To make matters worse, NATO does not have an integrated program for production of ammunition. Complicating the problem is the lack of standardization in calibers of weapons. There are large quantities of older U.S. weapons in use by the other NATO countries, and availability of ammunition from U.S. sources for support is, to say the least, problematical. Certainly U.S. Defense budgets have not contained funds for either reserve stocks or production support measures for such weapons. It is encouraging to see that the fiscal year 1975 Defense budget contains language which may indicate a change here.

As we look at this picture, one cannot help but question NATO's overall policy of making logistics a national responsibility. Logistics has consistently been one of NATO's greatest problems and, in the opinion of many, not just because of funding problems. In fact, a review of NATO's logistics achievements seems to indicate that it does best when it takes a requirement out of the national-responsibility arena. For example, the airfield construction program, the aircraft shelter program, the integrated command and control system, the airfield fuel-pipeline system, and the five-year-construction program were all created and managed by NATO as a whole. While ammunition is not as homogeneous as any of the areas cited, the potential for improvement of NATO readiness is even greater.

The next area of concern is fuel. The problem here is one of distribution. In my earlier discussion of oversea bases, I commented on the necessity for prior agreements. The same comment applies here. Generally we have reserves of fuel at our own air bases in Europe. In wartime, the requirement for fuel increases so greatly that reserve stocks are only a stopgap and reliance must be placed on a steady flow from an assured source. The sources of fuel and the manner in which it will be distributed to bases are problems not yet solved in Europe. One immediate solution for the early days of a conflict is to apply government control to all available stocks and give the military priority. Unfortunately, several key European countries do not have legislation on the books to permit this. To seek legislation of this kind after a war has broken out seems a poor policy.

At present much of the fuel for our air bases in Germany flows through an American-owned pipeline in France built during World War II. While still owned by the United States, it is operated under an agreement with France which gives that country the right to decide in the event of war whether or not we will be allowed to use it. Naturally, as with the use of forward bases, there is concern that the pipeline might not be available when needed most. In attempting to provide an alternative, it has been ascertained that pipelines are not used as ex-

tensively to move fuel to central Germany as appears economically feasible.

Since most of the oil comes through Rotterdam, we have pushed for construction of the additional required capacity with provisions for wartime utilization by the military. The necessary tie-ins with our base system would be included. Unfortunately, the current energy crisis is having an adverse effect on this proposal, which until recently looked very promising.

Next, consider our lines of communications. With the withdrawal of the French from NATO military affairs and the removal of U.S. forces from France, our current support lines for our troops run through the ports of Bremerhaven and Antwerp-Rotterdam. A look at the map shows that Bremerhaven is a poor port to support U.S. forces, because the supply routes parallel the front, and, more important, cut across the rear areas of all forces north of ours. This could cause serious coordination and control problems. The Netherlands ports, while more desirable, suffer from the fact that the rail and road systems have bottlenecks and circuitous routings to the location of our forces. The preferred solution would be to have our lines of communications run through France.

In order to plan properly, we have started negotiating agreements with Luxembourg, Belgium, the Netherlands, and the United Kingdom to provide and use their facilities and territory in peace and war. These agreements, which should be concluded soon, will provide the basis for storing selected U.S. materiel and equipment in these countries for use in support of our forces in time of war.

Finally, a word about our industrial base at home. We have come a long way since World War I when we fought with British rifles, French artillery, and French and British tanks. Our industrial base and our armaments industry are now capable of an effort of almost any desired magnitude.

But where would we get the raw materials to produce armaments on a massive mobilization scale? The United States has an appetite like no other country. It is estimated that since 1940 we have consumed more minerals than all mankind consumed up to that time. The National Commission on National Policy notes that the United States, with only 5 per cent of the world's population, consumes about 30 per cent of the world's production of major resources (more recent estimates are 6 per cent and 40 per cent respectively). Even though the world's population may triple in the next 30 years, the U.S. share will remain the same. (Some scientists estimate that at present rates of usage, the U.S. population will consume 80 per cent of the world's production of major resources by 1985.)

We are now suffering from an energy crisis of monumental proportions. Of less immediate concern, but of increasing importance to our economy and our security, is availability of essential raw materials. One authority has stated that there are 13 major industrial raw materials other than petroleum which are required by advanced industrial nations. A country is considered import-dependent if it must import more than 50 per cent of any of these materials. In 1950, the United States was import-dependent on only four: aluminum, manganese, nickel, and tin. By 1970, two more had been added: zinc and chromium. By 1985, three more are expected to be on the list: iron, lead and tungsten. And by the year 2000, the list will probably include potassium, copper, and sulfur, making the United States dependent on imports for all the basic raw materials except phosphate.

The U.S. Geological Survey, recently completing its first comprehensive assessment of the Nation's mineral resources in 20 years, found that after being self-sufficient in iron for most of its history, this country now imports about one-third of the 125 million tons of iron ore it uses each year.

One way of meeting this kind of problem has been to stockpile scarce materials. The materials now in the U.S. stockpile number about 91. An item is included in the stockpile when determined to be important to our wartime needs and not readily available in an emergency. When the stockpile was first set up after World War II, it was aimed at a major conventional war lasting for five years. Later this assumption was reduced to three years. In 1973, in part as an anti-inflation measure, the stockpile was adjusted downward to estimated requirements for the first year only in a major war. In monetary terms, the reduction lowered the value of the stockpile from about $4.1 billion to about $700 million.

In the Congress and the public-at-large there are strong feelings on this subject. There are not only the consumer and producer special interest groups, but also a group that has long believed the stockpile should have a greater variety and larger quantities of materials, in view of the rapidity with which we are depleting our domestic resources. In recent years the last group has been even more outspoken in view of statements by high Navy officials about the problems of the Navy in protecting our sea lanes in the event of a major war.

Following the publication of the new stockpile policy in February 1973, our studies showed that of the 91 materials in the stockpile, 46 would be in adequate supply from U.S. sources to meet requirements, and another 34 could be supplied from U.S. production or imported from Canada and Mexico. Of the 11 remaining, which would have to be imported from other areas of the world, substitutes could be provided for all but one. That one is industrial diamonds, for which our needs for one year could be met by a man carrying the required quantity in a suitcase from South Africa.

While this policy change does not appear to affect our military-force potential significantly, it could have a major impact on our national economy. To be so dependent for basic materials on sources not under our control may not be in our best interests as a nation. Certainly, we may have to be more mindful of our dependence on these materials in our conduct of our affairs

around the world.

When one considers our total economy and not just our defense needs, it would appear that the reduction in the stockpile may not be appropriate. Unfortunately, it is not clear who represents the national interest in this important area.

Let me conclude with a long view of history. The great transformation in war making of the 19th and 20th centuries—from the French Revolution through World War II—added enormously to the logistician's burdens: expanded firepower, mass armies, proliferating services, increased range, speed, and facility of movement. But it also provided the means for supporting those burdens—new sources of power, new transport and production, technology, and the new science of military administration. At the same time, the more fundamental industrial and agricultural revolutions, the population explosion, the emergence of the centralized nation-state with its nationalist dynamics, and a century of generally unchecked accumulation of material wealth, all combined to make available the basic human and material resources that 20th-century logisticians were called on to provide.

Since 1945, advances in military technology have continued to add to the logistician's burdens. Most obviously, the growing destructiveness of modern firepower, even without nuclear weapons, makes logistics support of high-technology warfare between well-matched antagonists very costly, if not prohibitive. This problem of imbalance between the system's capacity to destroy and its capacity to absorb destruction will remain until more fundamental changes intervene.

Logisticians must strive to correct this imbalance by reducing the vulnerability of the support system through reduction or elimination of the traditional support structure at every echelon. Fortunately, we have within our grasp the means of communication, the methods of transportation, the equipment for control, and the management techniques to make great progress toward this goal.

General Woolwine's article originally appeared in Perspectives, *a publication of the Industrial College of The Armed Forces. The version appearing here was adapted from the March-April edition of* Army Logistician *magazine.*

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A 1941 graduate of West Point, Lt. Gen. Walter Woolwine retired last month after an Army career spanning more than three decades.

Throughout his career, General Woolwine has had many assignments including service with the 84th Infantry Division as a company commander in World War II and later in the European Theater headquarters as a lieutenant colonel in charge of procurement. The general also served as treasurer of the U.S. Military Academy at West Point and as the commanding general of the 1st Logistical Command in Vietnam.

General Woolwine is recognized as an expert in logistical support and served as director of logistics with the Joint Chiefs of Staff.

In addition to his B.S. degree from West Point, General Woolwine earned a master's degree in business administration at Harvard. A 1963 graduate of the Industrial College of the Armed Forces, the general returned to the school as its director in 1973 and served in that position until his retirement.

Among his many awards while in the Army were the Distinguished Service Medal, Legion of Merit, Bronze Star, Air Medal, Army Commendation Medal and decorations from the government of Vietnam and Thailand.

A German Army MP directs a convoy of the U.S. Army's 1st Infantry Division.

See story page 17.

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